



LANDSLIDE DAMAGE RECOVERY: CREATION OF THE LANDSLIDE MANAGEMENT SYSTEM

Mieczysław OLBRYCH¹

Ladies and Gentlemen,

The subject of our conference is the problem of natural disasters risks. These risks have been felt in Poland exceptionally strongly during the past few years.

The historic flood of 1997 brought the country and society face to face with the great task of liquidating its effects (the damage was estimated for about USD 3.5 billion) and creating a landslide management and hazard mitigation system.

In 1997–2002, a National Programme of Reconstruction and Modernisation was implemented, during which damaged urban and rural infrastructures were restored, and a basis of a modern flood protection system was created.

In 2001, a comprehensive long-term flood recovery project for the Odra Basin 2000 was launched, based on a combined strategy of the anti-flood protection, protection of the purity of waters, the environment objectives and the restoration of the river's economic functions.

This year we start a further programme: a project for elimination of the landslides effects and creation of a protection system against the risk of geodynamic phenomena.

I would like to inform you of this very Project in its offing.

Abstract. An urgent need to create a system of landslide protection and of natural disasters (landslides) hazard mitigation was brought to the attention due to the exceptionally unfavourable weather conditions recorded during the past few years. Floods increased these phenomena in southern Poland on the unheard-of scale.

Recognising the need for a systemic solution of the landslide management problem, the Council of Ministers adopted a resolution on the organisational, legal and financial solutions for landslide management and hazard mitigation. Simultaneously, the Polish Government, taking into account the experience gained during the implementations of the recovery of nature and constructions damaged by flood, and anti-flood protection projects, has started the preparation of the next project. This new Government programme is based on a loan agreement signed between the Republic of Poland and the European Investment Bank on the co-funding a Landslide Protection Project (financing the Landslide Damage Recovery and Prevention). The total cost of the project will be EUR 67 M and it will be implemented in 2004–2008. The execution of the project will involve the participation of some 80 local government authorities. An absolute priority for the Poland's administrative units of the first two lowest ranks (gmina and powiat) in southern Poland is the formulation of a list of places particularly threatened by landslides, and their permanent inclusion in the local landuse plans and the recovery of the damaged infrastructure.

Key words: natural hazards, landslides, landslides damages, administrative decisions, changes in legislation, government's program of landslide protection management.

Abstrakt. Pilna potrzeba zbudowania systemu zabezpieczenia i ograniczenia zagrożeń wywoływanych zjawiskami naturalnymi (osuwiska) wynika ze szczególnie niekorzystnych warunków atmosferycznych w ostatnich latach. Powodzie spowodowały nasilenie się tych zjawisk na terenach południowej Polski, w skali dotąd nienotowanej.

Rada Ministrów, uznając konieczność systemowego rozwiązania problematyki zabezpieczenia przeciwosuwiskowego, przyjęła uchwałę o potrzebie rozwiązań organizacyjno-prawnych i finansowych dla przeciwdziałania i ograniczenia zagrożeń wynikających z ruchów osuwiskowych ziemi. Wprowadzono również szereg zmian w ustawodawstwie. Równocześnie,

¹ The Chancellery of the Prime Minister, Office of Natural Disasters Recovery, Chopina 1, 00-559 Warszawa, Poland; e-mail: igodala@kprm.gov.pl

korzystając z wcześniejszych doświadczeń przy realizacji projektów z dziedziny odbudowy i zabezpieczenia przeciwpowodziowego, Rząd RP rozpoczął realizację kolejnego programu. Rządowy program w dziedzinie usuwania skutków osuwisk i utworzenia osłony przeciwsuwiskowej został utworzony na podstawie zawartej umowy kredytowej między Rzeczpospolitą Polską a Europejskim Bankiem Inwestycyjnym na współfinansowanie Projektu „Osłona Przeciwsuwiskowa (finansowanie likwidacji skutków osuwisk i zapobiegania ich występowaniu)”. Całkowity koszt realizacji projektu wyniesie 67 mln euro i przebiegać będzie w latach 2004–2008. W realizacji projektu osuwiskowego uczestniczyć będzie około 80 jednostek samorządu terytorialnego, dla których pomoc wyniesie około 238 mln zł. Sprawą o pierwszoplanowym znaczeniu dla gmin i powiatów z terenów południowej Polski jest przede wszystkim wyznaczenie katalogu miejsc potencjalnie zagrożonych pojawieniem się osuwisk i wprowadzenie ich na stałe do planów zagospodarowania przestrzennego jednostek samorządu terytorialnego oraz odbudowy zniszczonej infrastruktury.

Słowa kluczowe: zagrożenia naturalne, osuwiska, zniszczenia poosuwiskowe, decyzje administracyjne, zmiany legislacyjne, rządowy program ochrony przeciwsuwiskowej.

THE PROBLEM OF LANDSLIDES IN POLAND

In the past, mass landslides have occurred with varying degrees of intensity throughout the Polish Flysch Carpathians. These are geological phenomena primarily connected with the action of natural forces: mainly as a result of heavy rainfall, snowmelts, increases in the level of the groundwater, and local river and stream breakouts.

Over the last decades, improper human activity, involving the undercutting of embankments during roads and buildings construction, intensive and improper forest exploitation (felling of trees on slopes), increased drilling, and more frequent fluctuations of the water level in retention reservoirs, have become increasingly responsible for initiating landslides.

Landslides pose a serious problem for life and business in the areas threatened by them. At particular risk are economically important constructions and installations, transport routes (roads, bridges and railroad tracks), high-tension lines, gas pipelines and other transmission lines.

Increased landslide activity, mainly as a result of floods, has proved to be of a particular hazard for human settlements. Landslides are causing the collapse and burial of residential and commercial buildings, and the appearance of cracks and bending in walls, creating the risk of their partial or total collapse.

Landslides, mudslides and shifts of debris are also causing major damage to regulated and secured riverbanks and accom-

panying water constructions. Water thresholds, weirs, locks and culverts are being destroyed by the pressure of shifting soil, thus reducing the effectiveness of the anti-flood protection and leading to local water rises and floods. These two phenomena are largely dependent on each other: the great majority of landslides occur when a flood has arisen.

In recent years, prevention and counteraction have been restricted to half-measures, only, such as emergency repairs of those sections of roads, which continued to be exposed to active landslides damage. The deviation of the landslides threatened roads sections or the relocation of buildings damaged by landslides, was very rare.

An absolute priority for the gminas and powiats in southern Poland is the formulation of a list of places particularly threatened by landslides, and their permanent inclusion in the land-use plans of local authorities. This will help to finally eliminate cases where permission to build in landslide-prone areas is granted.

Many gminas and powiats in the most threatened regions: Małopolska or the Sub-Carpathians, not only have no maps of areas threatened by landslides, but also have no basic information on the extent of these hazards. Therefore, there is still a great likelihood that housing construction is being approved in terrain where landslides can occur at any moment.

AN ESTIMATE OF LOSSES

The inclement atmospheric conditions in 1997–2001, including floods, snowfalls and torrential rains, increased these phenomena on an unheard-of scale in southern Poland, mainly in Małopolska and the Sub-Carpathians.

In Małopolska, the damage caused by landslides in 2000–2001, inspected by voivodship services, amounted to over PLN 173 M, including PLN 86 M worth of damage to roads and bridges. Considerable damage to private property was also recorded. 1.671 families were affected by landslides,

with damage exceeding PLN 46 M. Residential and farm buildings and farmlands were mainly affected.

Damage in the Sub-Carpathian region was smaller, amounting to some PLN 23 M, affecting mainly private property: 329 families suffered damage amounting to almost PLN 10 M. Damage to the gminas communal property reached PLN 8.5 M, with roads and bridges accounting for almost PLN 7.4 M. The total damage caused by landslides in the Małopolska and Sub-Carpathian regions in 2000–2001 exceeded PLN 196 M.

ADMINISTRATIVE DECISIONS ADEQUATE TO REQUIREMENTS

Recognising the need for a systemic solution of the landslide management problem, the Council of Ministers adopted at its meeting on 6th September, 2002, a resolution on the need of organisational-legal and financial solutions of landslide management and hazard mitigation. The Minister of Infrastructure was placed under an obligation to formulate proposals for amendments to the regulations on landuse planning and to the building law; the Minister of Environment was charged

with formulating amendments to the environmental protection law and to the agricultural land and forests protection law, with particular reference to landslide management and hazard mitigation; and the Minister of Finance was instructed to commence talks with the European Investment Bank in order to obtain funds with which to finance and subsidise landslide management and hazard mitigation measures.

CHANGES IN LEGISLATION

According to the current version of the landuse planning law, areas exposed to the landslides hazards are identified during preliminary surveys of the conditions and goals of land utilisation at gmina level. Furthermore, the law imposes an obligation to demarcate areas threatened by landslides in local landuse plans. These provisions coincide with those of the Building Law which require that any planned use of a land plot or an area be checked as to its conformity with the local landuse plans. Therefore, according to the needs, a building project should contain the results of engineering-geological surveys and meet the geotechnical conditions of buildings' foundations.

On 8th January, 2004, the Polish Sejm (parliament) adopted amendments to the agricultural land and forests protection law. According to the amendment of the first of the named laws, the rules for the management of land damaged by landslides will be determined during studies on the conditions and paths

of landuse planning in gminas, and local land utilisation plans. The law will place local chief executives under an obligation to keep records of areas exposed to the landslides hazard, and areas where landslides have already occurred.

In turn, under the terms of the amendment to the agricultural land and forests protection law, the owners of agricultural land, and land which has been reclaimed for agricultural purposes, will be obliged to counteract massive land movements.

The chief executives, directors of regional offices for state forests, or directors of national parks, as appropriate, will have the power to compel, by means of an administrative decision, the owners of land threatened with landslides to plant trees and shrubs upon the land or put such land to permanent agricultural use, whereby the costs of seeds and seedlings will be reimbursed. The amendment to the law contains also detailed regulations regarding the reclamation of land damaged by landslides.

GOVERNMENT'S LANDSLIDES MANAGEMENT PROGRAMME

By a resolution of 27th May, 2003, the Council of Ministers empowered the Minister of Finance to sign a credit agreement between the Republic of Poland and the European Investment Bank on the co-funding of a Landslide Protection Project (financing the Landslide Damage Recovery and Protection). The agreement was signed on 3rd June, 2003.

The loan, amounting to EUR 50 M, is earmarked entirely for the Landslide Management Programme. The total cost of the project will be EUR 67 M (EUR 50 M from the EBI loan, and EUR 17 M from the state budget). The project will be implemented in 2004–2008.

The following work will be financed by the loan:

1. The liquidation of damage caused by landslides: numerous individual tasks involving reconstructing, relocating and protecting the local communal infrastructure which was destroyed by or is at risk of destruction by landslides or coastal erosion.

2. The creation of a landslide protection system: a comprehensive monitoring and early-warning system of landslides and preparation of landslide inventory and hazard maps to be used in local landuse planning.

The execution of the project will involve the participation of some 80 local government authorities, mainly from the Ma-

łopolska and Sub-Carpathian regions, but also the Silesian, Holy Cross Mountains, Lublin, and individual gminas from Mazovia, Kujawy and Pomerania.

The gminas and powiats authorities of these voivodships have already prepared almost 500 applications for funding the specific tasks, regarding repair and reconstruction of destroyed road sections, bridges, transmission lines and other components of the infrastructure.

These application are being carefully considered and examined by experts from the Polish Geological Institute, which, by the way, is playing a leading role in the execution of the entire project, especially in the process of creating a modern system of landslide protection.

The final selection of individual tasks, with a definition of the nature and scope of the work involved and the proper methods of landslide protection, is made on the basis of the Voivodship Project Implementation Supervision Teams, appointed by the Voivodes, opinions.

Government aid to the local authorities in the execution of these tasks will amount to about PLN 238 M (EUR 50 M).

Project coordination is the responsibility of the Head of the Chancellery of the Prime Minister. The execution of the project's Component A: landslide damage recovery, has

been entrusted to the Office of Natural Disasters Recovery in the Chancellery of the Prime Minister, and its Component B: landslide protection system, has been entrusted to the Ministry of Environment.

The execution of this project has been possible thanks to the combined will and efforts of the Polish Geological Institute, government administration and local government authorities,

and the kindness of the European Investment Bank, which has provided help not just in the form of a loan, but also with its experience in the execution of similar projects.

Today's conference coincides with the start of the practical phase of the Landslide Project. That is a good sign. I am sure that the conference's outcome — and I wish it the greatest success — will be put to use in the execution of this project.